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Sequence Listing was accepted with existing errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: Wed Jun 06 20:00:09 EDT 2007

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Application No: 10808538

Version No: 2.1

Input Set:**Output Set:****Started:** 2007-06-06 20:00:01.170**Finished:** 2007-06-06 20:00:02.426**Elapsed:** 0 hr(s) 0 min(s) 1 sec(s) 256 ms**Total Warnings:** 33**Total Errors:** 0**No. of SeqIDs Defined:** 45**Actual SeqID Count:** 45

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Input Set:

Output Set:

Started: 2007-06-06 20:00:01.170
Finished: 2007-06-06 20:00:02.426
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 256 ms
Total Warnings: 33
Total Errors: 0
No. of SeqIDs Defined: 45
Actual SeqID Count: 45

Error code

Error Description

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SEQUENCE LISTING

<110> Immunomedics, Inc.
 Leung, Shui-on
 Losman, Michele J.
 Hansen, Hans

<120> HUMANIZATION OF AN ANTI-CARCINOEMBRYONIC ANTIGEN ANTI-IDIOTYPE
 ANTIBODY AS A TUMOR VACCINE AND FOR TARGETING APPLICATIONS

<130> 329329

<140> 10/808,538

<141> 2004-03-25

<150> US 09/155,106

<151> 1998-11-17

<150> PCT/US97/04696

<151> 1997-03-19

<150> US 60/013,708

<151> 1996-03-20

<160> 45

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<213> Rat

<400> 3

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35 40 45

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60

Xaa Xaa Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Phe Cys
85 90 95

Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp
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<400> 18

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25

30

Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Glu Gly Leu Glu Trp Val
 35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ser Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Thr Tyr Tyr Cys
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 20 25 30

Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
 65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys
85 90 95

Ser Arg Asp Asp Tyr Gly Gly Gln Ser Thr Tyr Val Met Asp Ala Trp
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Gly Gln Gly Thr Pro Val Thr Val Ser Ser
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Ser Leu Arg Leu Ser Cys Ser Ser Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30

Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys
85 90 95

Ser Arg Asp Asp Tyr Gly Gly Gln Ser Thr Tyr Val Met Asp Ala Trp
100 105 110

Gly Gln Gly Thr Pro Val Thr Val Ser Ser
115 120

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<223> Xaa can be any naturally occurring amino acid

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35 40 45

Tyr Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95

Xaa Phe Gly Gln Gly Thr Lys Leu Gln Ile Thr Arg Thr
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<400> 22

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
20 25 30

Leu Arg Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Arg Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Arg Ser Gly Ser Asp Phe Ser Leu Thr Ile Asn Ser Leu Glu Ser
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Glu Asp Met Ala Ile Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Thr Phe Gly Ile Gly Thr Lys Leu Glu Arg Lys Arg
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20 25 30

Leu Arg Trp Phe Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Arg Ser Gly Ser Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
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Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr

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Thr Phe Gly Ile Gly Thr Lys Leu Gln Ile Lys Arg
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
 20 25 30

Leu Arg Trp Phe Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Thr Phe Gly Ile Gly Thr Lys Leu Gln Ile Lys Arg
 100 105

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ccaggggaagg gtcttgaatg ggttgcgctcc attactagta ctggtggtgg tacctaccat 180
gcagagtctg tgaagggccg attcactatc tccagagata attcaaaaaa caccctgttc 240
ctgcaaattg acagtctgag gcctgaggac acgggcgctt attactgttc aagagatgac 300
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20 25 30

Trp Met Thr Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Ser Ile Thr Ser Thr Gly Gly Gly Thr Tyr His Ala Glu Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Tyr Cys
85 90 95

Ser Arg Asp Asp Tyr Gly Gly Gln Ser Thr Tyr Val Met Asp Ala Trp
100 105 110

Gly Gln Gly Thr Pro Val Thr Val Ser Ser
115 120

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gggaaagctc cgaaactttt gatttatggT gcaaccaact tggctgcagg ggtcccatca 180

cggttcagtg gcagtgggtc tgggacagat tttactTTta ccatctcaag ctttcagcct 240

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
20 25 30

Leu Arg Trp Phe Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
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Thr Phe Gly Ile Gly Thr Lys Leu Gln Ile Lys Arg
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cggttcagtc gcagtaggtc tgggtcagat ttttctctga ccatcaacag cctggagtct 240
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gggaccaagc tggaacggaa acgg 324

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<211> 108
<212> PRT
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<400> 30

Asp Ile Gln Leu Thr Gln Ser Pro Ala Ser Leu Pro Ala Ser Leu Gly
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Tyr
20 25 30

Leu Arg Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Arg Leu Leu Ile
35 40 45

Tyr Gly Ala Thr Asn Leu Ala Ala Gly Val Pro Ser Arg Phe Ser Arg
50 55 60

Ser Arg Ser Gly Ser Asp Phe Ser Leu Thr Ile Asn Ser Leu Glu Ser
65 70 75 80

Glu Asp Met Ala Ile Tyr Tyr Cys Leu His His Ser Glu Tyr Pro Tyr
85 90 95

Thr Phe Gly Ile Gly Thr Lys Leu Glu Arg Lys Arg
100 105

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gcagagtctg tgaagggccg attcactatc tccagagata attcaaaaag caccctgtac 240
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